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| NEWS 1 | | Web Page URLs for STN Seminar Schedule - N. America |
| NEWS 2 | | "Ask CAS" for self-help around the clock |
| NEWS 3 | SEP 09 | CA/CAplus records now contain indexing from 1907 to the present |
| NEWS 4 | DEC 08 | INPADOC: Legal Status data reloaded |
| NEWS 5 | SEP 29 | DISSABS now available on STN |
| NEWS 6 | OCT 10 | PCTFULL: Two new display fields added |
| NEWS 7 | OCT 21 | BIOSIS file reloaded and enhanced |
| NEWS 8 | OCT 28 | BIOSIS file segment of TOXCENTER reloaded and enhanced |
| NEWS 9 | NOV 24 | MSDS-CCOHS file reloaded |
| NEWS 10 | DEC 08 | CABA reloaded with left truncation |
| NEWS 11 | DEC 08 | IMS file names changed |
| NEWS 12 | DEC 09 | Experimental property data collected by CAS now available in REGISTRY |
| NEWS 13 | DEC 09 | STN Entry Date available for display in REGISTRY and CA/CAplus |
| NEWS 14 | DEC 17 | DGENE: Two new display fields added |
| NEWS 15 | DEC 18 | BIOTECHNO no longer updated |
| NEWS 16 | DEC 19 | CROPU no longer updated; subscriber discount no longer available |
| NEWS 17 | DEC 22 | Additional INPI reactions and pre-1907 documents added to CAS databases |
| NEWS 18 | DEC 22 | IFIPAT/IFIUDB/IFICDB reloaded with new data and search fields |
| NEWS 19 | DEC 22 | ABI-INFORM now available on STN |
| NEWS 20 | JAN 27 | Source of Registration (SR) information in REGISTRY updated and searchable |
| NEWS 21 | JAN 27 | A new search aid, the Company Name Thesaurus, available in CA/CAplus |
| NEWS 22 | FEB 05 | German (DE) application and patent publication number format changes |
| NEWS 23 | MAR 03 | MEDLINE and LMEDLINE reloaded |
| NEWS 24 | MAR 03 | MEDLINE file segment of TOXCENTER reloaded |
| NEWS 25 | MAR 03 | FRANCEPAT now available on STN |

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|---|---|
| NEWS EXPRESS | MARCH 5 CURRENT WINDOWS VERSION IS V7.00A, CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP), AND CURRENT DISCOVER FILE IS DATED 3 MARCH 2004 |
| NEWS HOURS | STN Operating Hours Plus Help Desk Availability |
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FILE 'HOME' ENTERED AT 14:46:47 ON 21 MAR 2004

=> file biosis
COST IN U.S. DOLLARS

| | SINCE FILE ENTRY | TOTAL SESSION |
|---|---|---|
| FULL ESTIMATED COST | 0.21 | 0.21 |

FILE 'BIOSIS' ENTERED AT 14:46:59 ON 21 MAR 2004


FILE COVERS 1969 TO DATE.
CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 17 March 2004 (20040317/ED)

FILE RELOADED: 19 October 2003.

=> s ((ethyl (w) oleate) or (ethyl (w) palmitate) or (ethyl (w) stearate) or (ethyl (w) arachidonate) or (ethyl (w) linoleate))
```
         65713 ETHYL
             2 ETHYLS
         65714 ETHYL
                 (ETHYL OR ETHYLS)
          5640 OLEATE
            32 OLEATES
          5655 OLEATE
                 (OLEATE OR OLEATES)
           181 ETHYL (W) OLEATE
         65713 ETHYL
             2 ETHYLS
         65714 ETHYL
                 (ETHYL OR ETHYLS)
          8344 PALMITATE
            54 PALMITATES
          8378 PALMITATE
                 (PALMITATE OR PALMITATES)
            93 ETHYL (W) PALMITATE
         65713 ETHYL
             2 ETHYLS
         65714 ETHYL
                 (ETHYL OR ETHYLS)
          2545 STEARATE
            88 STEARATES
          2603 STEARATE
                 (STEARATE OR STEARATES)
            43 ETHYL (W) STEARATE
         65713 ETHYL
             2 ETHYLS
         65714 ETHYL
                 (ETHYL OR ETHYLS)
          6111 ARACHIDONATE
            11 ARACHIDONATES
          6116 ARACHIDONATE
                 (ARACHIDONATE OR ARACHIDONATES)
            39 ETHYL (W) ARACHIDONATE
         65713 ETHYL
             2 ETHYLS
         65714 ETHYL
                 (ETHYL OR ETHYLS)
          3185 LINOLEATE
```

```
            15 LINOLEATES
          3194 LINOLEATE
                 (LINOLEATE OR LINOLEATES)
           113 ETHYL (W) LINOLEATE
L1         372 ((ETHYL (W) OLEATE) OR (ETHYL (W) PALMITATE) OR (ETHYL (W) STEAR
               ATE) OR (ETHYL (W) ARACHIDONATE) OR (ETHYL (W) LINOLEATE))

=> s l1 (p) (ethanol or (ethyl (w) alcohol))
         82890 ETHANOL
           146 ETHANOLS
         82984 ETHANOL
                 (ETHANOL OR ETHANOLS)
         65713 ETHYL
             2 ETHYLS
         65714 ETHYL
                 (ETHYL OR ETHYLS)
        108092 ALCOHOL
         15213 ALCOHOLS
        118717 ALCOHOL
                 (ALCOHOL OR ALCOHOLS)
L2          60 L1 (P) (ETHANOL OR (ETHYL (W) ALCOHOL))

=> s l2 (p) (liver or adipose)
        456495 LIVER
         23591 LIVERS
        461135 LIVER
                 (LIVER OR LIVERS)
         28594 ADIPOSE
L3          10 L2 (P) (LIVER OR ADIPOSE)

=> d l3 1-10 kwic

L3   ANSWER 1 OF 10  BIOSIS  COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB   FA ethyl esters (FAEE) are nonoxidative metabolites of ethanol
     produced by the esterification of FA and ethanol. FAEE have
     been implicated as mediators of ethanol-induced organ damage in
     vivo and in vitro, and are markers of ethanol intake. Upon
     ethanol intake, FAEE are synthesized in the liver and
     pancreas in significant quantities. There is limited information on the
     stimulation of FAEE synthesis upon addition of exogenous FA in vitro.
     HepG2 cells were incubated with ethanol alone, ethanol
     with 25 muM linoleate, and ethanol with 25 muM stearate. The
     amount of FAEE in human hepatoblastoma (HepG2) cells was determined 1-3 h
     after ethanol and FA addition. Stearate increased the FAEE
     concentration in HepG2 cells when incubated with the cells for 1 h,
     whereas linoleate did not increase the cellular FAEE concentration at any
     time. Ethyl palmitate, ethyl
     stearate, and ethyl oleate were the
     predominant FAEE species identified in all cases, independent of the
     specific supplemental FA added to the medium.

L3   ANSWER 2 OF 10  BIOSIS  COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB   The role of fatty acid ethyl esters (FAEE), the nonoxidative
     ethanol metabolites, as mediators of alcohol-induced organ damage
     is increasingly being recognized. FAEE are detectable in the blood and in
     liver and adipose tissue after ethanol
     ingestion, and on that basis, FAEE can be used as markers of
     ethanol intake. In this study, 10 samples of human brain were
     collected at autopsy at the Massachusetts Medical Examiner's Office and
     analyzed for FAEE. FAEE were isolated and quantified as mass per gram of
     wet weight. The blood ethanol level was also obtained in each
     case along with the other drugs detected in routine postmortem toxicology
     screening tests. Ethyl arachidonate was the
     predominant FAEE species in the brain, representing up to 77.4% of total
     FAEE in the brain. The percent age of ethyl
```

**arachidonate** of the total FAEE in the brain was significantly higher than what has been found in all other organs and tissues previously analyzed. Linoleate, the precursor of arachidonate, was a poor substrate for FAEE synthesis, as the percentage of **ethyl linoleate** of the total FAEE content was extremely low. Thus, this reflects preferred incorporation of arachidonate into newly synthesized FAEE in. . .

L3 ANSWER 3 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB Background: Fatty acid ethyl esters (FAEEs) are nonoxidative **ethanol** metabolites that have been implicated as mediators of alcohol-induced organ damage. FAEEs are detectable in the blood after **ethanol** ingestion, and on that basis have been proposed as markers of **ethanol** intake. Because blood is not always available at autopsy, in this study we quantified FAEEs in human **liver** and **adipose** tissue as potential postmortem markers of premortem **ethanol** intake. Methods: Twenty-four sets of samples were collected at the Massachusetts State Medical Examiner's Office, and 7 sets of samples were obtained from the Pathology Department of Massachusetts General Hospital. Samples of **liver** and **adipose** tissue were collected at autopsy, and FAEEs were isolated and quantified from these organs as mass per gram of wet weight. Postmortem analysis of blood involved assessment for **ethanol** and other drugs. Results: The study shows a substantial difference in FAEE concentrations in **liver** and **adipose** tissue of patients with detectable blood **ethanol** at the time of autopsy vs those with no detectable blood **ethanol**, who were eigher chronic alcoholics or social drinkers. In addition, a specific FAEE, **ethyl arachidonate**, was found at concentrations >200 pmol/g almost exclusively in the **liver** and **adipose** tissue of individuals with detectable blood **ethanol** at the time of death, providing an additional FAEE-related marker for prior **ethanol** intake. Conclusions: The mass of FAEEs in **liver** and **adipose** tissue and the presence of **ethyl arachidonate** can serve as postmortem markers of premortem **ethanol** intake when no blood sample can be obtained.

L3 ANSWER 4 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB Background: Fatty acid ethyl esters (FAEE) are nonoxidative **ethanol** metabolites that have been shown to be long term markers of **ethanol** intake and have been implicated as mediators of **ethanol**-induced cell injury. Previous studies have indicated that the fatty acid composition of the FAEE found in the plasma of human subjects after **ethanol** ingestion is predominantly **ethyl palmitate** and **ethyl oleate.** This raised the possibility that there is some selectivity toward the fatty acid used for FAEE to be exported from the **liver** into the blood. Methods: To address the hypothesis that the fatty acid composition of FAEE secreted from organs, such as the **liver** and pancreas, differs from the fatty acid composition of FAEE in the organs, this study was performed using rats that received **ethanol** by intra-arterial infusion. Results: It was found that the fatty acids in FAEE differed significantly in plasma versus **liver**, bile versus **liver**, and pancreatic secretions versus pancreas. Conclusions: These results indicate that organs selectively export certain FAEE species.

L3 ANSWER 5 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB The fate of (14C)**ethyl-linoleate** (EthLin) after its intravenous administration was investigated in pentobarbital-anesthetized rats. The disappearance of (14C)EthLin from the plasma was very rapid. . . time following the intravenous injection and that a large portion of the EthLin is hydrolyzed instantly to linoleic acid and **ethanol.** About 9-11% of the plasma (14C)EthLin or its breakdown products are irreversibly cleared from the plasma compartment each minute. Most of the 14C-labeled compounds that originated in the plasma were recovered in the

rat **liver** and lungs and to a lesser extent in the heart, spleen, and kidneys. Two hr after the (14C)EthLin administration, apprx. . .

L3 ANSWER 6 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB Background/Aims: Fatty acid ethyl esters (FAEEs) are nonoxidative products of **ethanol** metabolism. They have been implicated as mediators of **ethanol**-induced organ damage because FAEE and FAEE synthase have been found specifically in the organs damaged by **ethanol** abuse. This study showed toxicity specifically related to FAEE or their metabolites for intact human hepatoblastoma-derived cells (HepG2). Methods: The lipid core of human low-density lipoprotein (LDL) was extracted and the LDL particle reconstituted with either **ethyl oleate** or **ethyl arachidonate.** Cultured HepG2 cells were incubated with LDL containing FAEE. Cell proliferation was measured by (methyl-3H)thymidine incorporation. Protein synthesis was determined using L-(35S)methionine. Results: Incubation of cells with 600 mu-mol/L **ethyl oleate** or 800 mu-mol/L **ethyl arachidonate** decreased (methyl-3H)thymidine incorporation into HepG2 cells by 31% and 37%, respectively. LDL reconstituted with 400 mu-mol/L **ethyl oleate** decreased protein synthesis in intact HepG2 cells by 41%. Electron microscopy revealed significant changes in cell morphology, particularly involving the. . . are toxic for intact human hepatoblastoma cells and that they or their metabolites may be an important causative agent in **ethanol**-induced **liver** damage.

L3 ANSWER 7 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB Fatty acid ethyl ester (FAEE) synthase was obtained from rat **adipose** tissue in an electrophoretically homogeneous form. The enzyme associated with carboxylesterase activity was purified by acetone precipitation followed by successive chromatographies on DEAE-cellulose, phenyl-Sepharose, and Sephadex G-100 gel. The two activities in rat **adipose** tissue were associated as judged by their co-elution profiles, copurifications at differnt steps, co-precipitations by antibody raised against purified FAEE. . . both tri- and monoacylglycerols, and the susceptibilities of substrates increase with decreasing acyl chain length of the fatty acid moiety. **Ethyl oleate** -hydrolyzing activity was about one-eighth of the synthesizing activity. The N-terminal amino acid sequence of the first 27 residues of the purified enzyme was identical to that of the carboxylesterase from rat **liver.** With a polyclonal rabbit antibody against the rat **adipose** tissue FAEE synthase, the enzyme was demonstrated in the **liver**, lung, and testis, but not in the kidney. The antibody removed the FAEE-synthesizing activities in **adipose** tissue (86%), **liver** (23%), lung (62%), and testis (82%). These results suggest that carboxylesterase contributes to the nonoxidative **ethanol** metabolism (FAEE synthesis) in various organs.

L3 ANSWER 8 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB Fatty acid esters (FAEE) are the end products of a non-oxidative pathway for **ethanol** metabolism in a variety of human, rabbit, rat and murine tissues. Our objective was to determine the significance of this pathway in the metabolism of **ethanol** by the rat lung. In vitro, 14C-labeled **ethyl oleate** formation was assayed in the lung and compared with the pancreas, **liver**, heart and brain. Lipids were extracted with acetone, and 14C-labeled **ethyl oleate** was isolated and quantified by thin layer chromatography (TLC) and scintillation spectrometry. FAEE synthetic activity in the lungs (in vitro) was found to be intermediate among the organs examined. In vivo, male rats received 10% **ethanol** in their drinking water with or without daily i.p. injections of 4-methylpyrazole (1 mmol/kg body wt) for 15 days. Another group of male rats received 4 g/kg body wt **ethanol** as a 50% (v/v) solution by gavage every 12 h for 2 days. FAEE from the three organs with the highest in vitro activity for FAEE synthesis (pancreas, **liver** and lung) were extracted with

acetone, isolated from normal lipids by TLC and separated by gas chromatography. The lung had lower FAEE-forming activity than the pancreas or the **liver** in the 15-day studies. However, in the 2-day study, the lung had higher activity than the **liver** but lower activity than the pancreas. **Ethyl oleate**, **ethyl stearate** and **ethyl palmitate** were the predominant FAEE formed in the intact organism. **Ethanol** -induced FAEE may play a role in the development of alcohol-related injuries to the lung.

L3 ANSWER 9 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB. . . acids as well as the activity of the enzyme synthesizing these esters (fatty acid ethyl ester synthase) were determined in **adipose** tissue of rats ingesting **ethanol** (9-16 g/kg body weight/day) for different periods of time. After 10 and 17 weeks of **ethanol** exposure about 300 nmol of ethyl esters of oleic, palmitic, stearic, and linoleic acids were found per gram **adipose** tissue. The ethyl esters disappeared after 1 week of abstinence. Closer analyses, using radioactive **ethanol**, revealed a half-life of the esters of less than 24 hr. The bulk of the esters was found in a membrane preparation of isolated adipocytes. Hormone-sensitive lipase hydrolyzed emulsified **ethyl oleate** as efficiently as that of trioleoylglycerol, but in mixed **ethyl oleate**/trioleoyl glycerol particles the hydrolysis of **ethyl oleate** was slower, suggesting a decreased accessibility. Synthase activity was found in **adipose** tissue from rats not exposed to **ethanol.** It doubled after 10 and 17 weeks of **ethanol** and decreased with a half-life of at least a week after abstinence. It was concluded that ethyl esters of fatty acids are formed in rat **adipose** tissue as previously shown in other tissues. They seem to be stored mainly in membranous parts of the adipocytes. Synthase activity is induced by **ethanol.** The elevated activity has a longer half-life, and may be useful as an indicator of alcohol abuse.

L3 ANSWER 10 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AB. . . Glutathione S-transferase (GST) isoenzyme of human pancreas were purified, characterized and evaluated for their possible role in the metabolism of **ethanol.** Human pancreas has at least two GST isoenzymes belonging to the Alpha class (pI 8.8 and 8.1), one belonging to. . . one belonging to the Pi class (pI 4.9). During the purification of GSTs from pancrease as well as from heart, **liver** , lung, brain and muscle, the fatty acid ethyl ester synthase (FAEES) activity was monitored in order to evaluate the role of GSTs in metabolism of **ethanol**, as suggested in earlier studies. Both t.l.c. and h.p.l.c. were used to identify **ethyl oleate** in reaction mixtures to monitor FAEES activity. During the purification of GSTs with the use of affinity chromatography on GSH. . .

=> d l3 1-10 iall

L3 ANSWER 1 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2004:53149 BIOSIS
DOCUMENT NUMBER: PREV200400056242
TITLE: Stearic acid stimulates FA ethyl ester synthesis in HepG2 cells exposed to ethanol.
AUTHOR(S): Hasaba, Ali; Cluette-Brown, Joanne E.; Laposata, Michael [Reprint Author]
CORPORATE SOURCE: Clinical Laboratories, Massachusetts General Hospital, 55 Fruit St, Gray 235, Boston, MA, 02114, USA mlaposata@partners.org
SOURCE: Lipids, (October 2003) Vol. 38, No. 10, pp. 1051-1055. print.
CODEN: LPDSAP. ISSN: 0024-4201.
DOCUMENT TYPE: Article

LANGUAGE: English
ENTRY DATE: Entered STN: 21 Jan 2004
Last Updated on STN: 21 Jan 2004
ABSTRACT:FA ethyl esters (FAEE) are nonoxidative metabolites of **ethanol** produced by the esterification of FA and **ethanol**. FAEE have been implicated as mediators of **ethanol**-induced organ damage in vivo and in vitro, and are markers of **ethanol** intake. Upon **ethanol** intake, FAEE are synthesized in the **liver** and pancreas in significant quantities. There is limited information on the stimulation of FAEE synthesis upon addition of exogenous FA in vitro. HepG2 cells were incubated with ***ethanol*** alone, **ethanol** with 25 muM linoleate, and ***ethanol*** with 25 muM stearate. The amount of FAEE in human hepatoblastoma (HepG2) cells was determined 1-3 h after **ethanol** and FA addition. Stearate increased the FAEE concentration in HepG2 cells when incubated with the cells for 1 h, whereas linoleate did not increase the cellular FAEE concentration at any time. **Ethyl palmitate**, ***ethyl*** **stearate**, and **ethyl oleate** were the predominant FAEE species identified in all cases, independent of the specific supplemental FA added to the medium.
CONCEPT CODE: Cytology - General 02502
Cytology - Human 02508
Biochemistry studies - General 10060
Biochemistry studies - Lipids 10066
Digestive system - Physiology and biochemistry 14004
Endocrine - General 17002
Endocrine - Pancreas 17008
INDEX TERMS: Major Concepts
Biochemistry and Molecular Biophysics; Cell Biology; Digestive System (Ingestion and Assimilation)
INDEX TERMS: Parts, Structures, & Systems of Organisms
liver: digestive system; pancreas: digestive system, endocrine system
INDEX TERMS: Chemicals & Biochemicals
FA ethyl ester [FAEE]: synthesis; ethanol: exposure; ethyl oleate; ethyl palmitate; ethyl stearate; linoleate; stearate; stearic acid
ORGANISM: Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
HepG2 cell line (cell line): human hepatoblastoma cells
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates
REGISTRY NUMBER: 64-17-5 (ethanol)
111-62-6 (ethyl oleate)
628-97-7 (ethyl palmitate)
111-61-5 (ethyl stearate)
1509-85-9 (linoleate)
646-29-7 (stearate)
57-11-4 (stearic acid)

L3 ANSWER 2 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2003:339546 BIOSIS
DOCUMENT NUMBER: PREV200300339546
TITLE: Ethyl arachidonate is the predominant fatty acid ethyl ester in the brains of alcohol-intoxicated subjects at autopsy.
AUTHOR(S): Refaai, M. A.; Nguyen, P. N.; Cluette-Brown, J. E.; Laposata, M. [Reprint Author]
CORPORATE SOURCE: Clinical Laboratories, Massachusetts General Hospital, Room 235, Gray Bldg., Boston, MA, 02114, USA
mlaposata@partners.org
SOURCE: Lipids, (March 2003) Vol. 38, No. 3, pp. 269-273. print.

CODEN: LPDSAP. ISSN: 0024-4201.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 23 Jul 2003
Last Updated on STN: 23 Jul 2003

ABSTRACT:The role of fatty acid ethyl esters (FAEE), the nonoxidative ***ethanol*** metabolites, as mediators of alcohol-induced organ damage is increasingly being recognized. FAEE are detectable in the blood and in ***liver*** and **adipose** tissue after **ethanol** ingestion, and on that basis, FAEE can be used as markers of **ethanol** intake. In this study, 10 samples of human brain were collected at autopsy at the Massachusetts Medical Examiner's Office and analyzed for FAEE. FAEE were isolated and quantified as mass per gram of wet weight. The blood ***ethanol*** level was also obtained in each case along with the other drugs detected in routine postmortem toxicology screening tests. **Ethyl** ***arachidonate*** was the predominant FAEE species in the brain, representing up to 77.4% of total FAEE in the brain. The percent age of ***ethyl*** **arachidonate** of the total FAEE in the brain was significantly higher than what has been found in all other organs and tissues previously analyzed. Linoleate, the precursor of arachidonate, was a poor substrate for FAEE synthesis, as the percentage of **ethyl** ***linoleate*** of the total FAEE content was extremely low. Thus, this reflects preferred incorporation of arachidonate into newly synthesized FAEE in the brain. Since arachidonate is derived from linoleate, which is depleted in FAEE while arachidonate is enriched, the synthesis of FAEE may be linked to the desaturation and elongation of linoleate to arachidonate.

CONCEPT CODE:
Biochemistry studies - General 10060
Blood - Blood and lymph studies 15002
Blood - Blood cell studies 15004
Nervous system - Physiology and biochemistry 20504
Toxicology - General and methods 22501

INDEX TERMS:
Major Concepts
Nervous System (Neural Coordination); Toxicology

INDEX TERMS:
Parts, Structures, & Systems of Organisms
blood: blood and lymphatics; brain: nervous system

INDEX TERMS:
Diseases
alcohol intoxication: toxicity
Alcoholic Intoxication (MeSH)

INDEX TERMS:
Chemicals & Biochemicals
arachidonate; ethanol: toxin; ethyl arachidonate; fatty acid ethyl esters: synthesis; linoleate

INDEX TERMS:
Methods & Equipment
autopsy: clinical techniques

ORGANISM:
Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
human (common)
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates

REGISTRY NUMBER:
506-32-1 (arachidonate)
64-17-5 (ethanol)
1808-26-0 (ethyl arachidonate)
1509-85-9 (linoleate)

L3 ANSWER 3 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2002:178588 BIOSIS
DOCUMENT NUMBER: PREV200200178588
TITLE: Liver and adipose tissue fatty acid ethyl esters obtained at autopsy are postmortem markers for premortem ethanol intake.
AUTHOR(S): Refaai, Majed A.; Nguyen, Phan N.; Steffensen, Thora S.; Evans, Richard J.; Cluette-Brown, Joanne E.; Laposata,

Michael [Reprint author]
CORPORATE SOURCE: Massachusetts General Hospital, Room 235, Gray Building, Boston, MA, 02114, USA
mlaposata@partners.org
SOURCE: Clinical Chemistry, (January, 2002) Vol. 48, No. 1, pp. 77-83. print.
CODEN: CLCHAU. ISSN: 0009-9147.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 6 Mar 2002
Last Updated on STN: 6 Mar 2002
ABSTRACT:Background: Fatty acid ethyl esters (FAEEs) are nonoxidative ***ethanol*** metabolites that have been implicated as mediators of alcohol-induced organ damage. FAEEs are detectable in the blood after ***ethanol*** ingestion, and on that basis have been proposed as markers of ***ethanol*** intake. Because blood is not always available at autopsy, in this study we quantified FAEEs in human **liver** and **adipose** tissue as potential postmortem markers of premortem **ethanol** intake. Methods: Twenty-four sets of samples were collected at the Massachusetts State Medical Examiner's Office, and 7 sets of samples were obtained from the Pathology Department of Massachusetts General Hospital. Samples of ***liver*** and **adipose** tissue were collected at autopsy, and FAEEs were isolated and quantified from these organs as mass per gram of wet weight. Postmortem analysis of blood involved assessment for **ethanol** and other drugs. Results: The study shows a substantial difference in FAEE concentrations in **liver** and **adipose** tissue of patients with detectable blood **ethanol** at the time of autopsy vs those with no detectable blood **ethanol**, who were eigher chronic alcoholics or social drinkers. In addition, a specific FAEE, **ethyl** ***arachidonate*** , was found at concentrations >200 pmol/g almost exclusively in the **liver** and **adipose** tissue of individuals with detectable blood **ethanol** at the time of death, providing an additional FAEE-related marker for prior **ethanol** intake. Conclusions: The mass of FAEEs in **liver** and **adipose** tissue and the presence of **ethyl arachidonate** can serve as postmortem markers of premortem **ethanol** intake when no blood sample can be obtained.
CONCEPT CODE:
General biology - Forensic science 00531
Biochemistry studies - General 10060
Digestive system - Physiology and biochemistry 14004
Blood - Blood and lymph studies 15002
Blood - Blood cell studies 15004
Toxicology - General and methods 22501
INDEX TERMS:
Major Concepts
Biochemistry and Molecular Biophysics; Forensics; Toxicology
INDEX TERMS:
Parts, Structures, & Systems of Organisms
adipose tissue; blood: blood and lymphatics; liver: digestive system
INDEX TERMS:
Chemicals & Biochemicals
ethanol: premortem intake; ethyl arachidonate: postmortem marker; fatty acid ethyl esters [FAEEs]: postmortem markers
INDEX TERMS:
Methods & Equipment
autopsy: examination method; fatty acid ethyl ester extraction [FAEE]: extraction method; fatty acid ethyl ester quantification [FAEE]: quantification method; postmortem analysis: analytical method; solid phase extraction: extraction method
ORGANISM:
Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
human: chronic alcoholic, patient, social drinker

Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates

REGISTRY NUMBER: 64-17-5 (ethanol)
1808-26-0 (ethyl arachidonate)

L3 ANSWER 4 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 2000:501555 BIOSIS
DOCUMENT NUMBER: PREV200000501676
TITLE: Differences in the fatty acid composition of fatty acid ethyl esters in organs and their secretions.
AUTHOR(S): Laposata, Michael [Reprint author]; Kabakibi, Ayman; Walden, Michael P.; Cluette-Brown, Joanne E.; Nanji, Azra A.; Refaai, Majed A.; Werner, Jens; Nanji, Amin A.
CORPORATE SOURCE: Clinical Laboratories, Massachusetts General Hospital, Room 235 Gray Building, Boston, MA, 02114, USA
SOURCE: Alcoholism Clinical and Experimental Research, (October, 2000) Vol. 24, No. 10, pp. 1488-1491. print.
CODEN: ACRSDM. ISSN: 0145-6008.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 15 Nov 2000
Last Updated on STN: 11 Jan 2002

ABSTRACT:Background: Fatty acid ethyl esters (FAEE) are nonoxidative ***ethanol*** metabolites that have been shown to be long term markers of ***ethanol*** intake and have been implicated as mediators of **ethanol** -induced cell injury. Previous studies have indicated that the fatty acid composition of the FAEE found in the plasma of human subjects after ***ethanol*** ingestion is predominantly **ethyl palmitate** and **ethyl oleate.** This raised the possibility that there is some selectivity toward the fatty acid used for FAEE to be exported from the ***liver*** into the blood. Methods: To address the hypothesis that the fatty acid composition of FAEE secreted from organs, such as the **liver** and pancreas, differs from the fatty acid composition of FAEE in the organs, this study was performed using rats that received **ethanol** by intra-arterial infusion. Results: It was found that the fatty acids in FAEE differed significantly in plasma versus **liver**, bile versus ***liver*** , and pancreatic secretions versus pancreas. Conclusions: These results indicate that organs selectively export certain FAEE species.

CONCEPT CODE: Digestive system - Physiology and biochemistry 14004
Biochemistry studies - General 10060
Blood - Blood and lymph studies 15002
Blood - Blood cell studies 15004
Endocrine - General 17002
Toxicology - General and methods 22501

INDEX TERMS: Major Concepts
Toxicology

INDEX TERMS: Parts, Structures, & Systems of Organisms
blood: blood and lymphatics; liver: digestive system; pancreas: digestive system, endocrine system

INDEX TERMS: Diseases
ethanol-induced cell injury: toxicity

INDEX TERMS: Chemicals & Biochemicals
ethanol: intra-arterial, toxicity; ethyl oleate; ethyl palmitate; fatty acid ethyl esters: fatty acid composition, nonoxidative ethanol metabolites

ORGANISM: Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
rat: Sprague-Dawley, male
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates

REGISTRY NUMBER: 64-17-5 (ethanol)
111-62-6 (ethyl oleate)
628-97-7 (ethyl palmitate)

L3 ANSWER 5 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1995:260359 BIOSIS
DOCUMENT NUMBER: PREV199598274659
TITLE: Turnover of ethyl-linoleate in rat plasma and its distribution in various organs.
AUTHOR(S): Hungund, Basalingappa L. [Reprint author]; Zheng, Zhihong; Barkai, Amiram I.
CORPORATE SOURCE: Div. Analytical Psychopharmacology, New York Psychiatric Inst., 722 West 168th Street, Unit 128, New York, NY 10032, USA
SOURCE: Alcoholism Clinical and Experimental Research, (1995) Vol. 19, No. 2, pp. 374-377.
CODEN: ACRSDM. ISSN: 0145-6008.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 13 Jun 1995
Last Updated on STN: 11 Jul 1995

ABSTRACT:The fate of (14C)**ethyl-linoleate** (EthLin) after its intravenous administration was investigated in pentobarbital-anesthetized rats. The disappearance of (14C)EthLin from the plasma was very rapid and followed quite closely a biexponential function of time. Fitting of the experimental data to a two-compartmental mammillary model revealed that the labeled compounds are eliminated from the plasma with a half-life of lt 1 min during the early time following the intravenous injection and that a large portion of the EthLin is hydrolyzed instantly to linoleic acid and ***ethanol.*** About 9-11% of the plasma (14C)EthLin or its breakdown products are irreversibly cleared from the plasma compartment each minute. Most of the 14C-labeled compounds that originated in the plasma were recovered in the rat **liver** and lungs and to a lesser extent in the heart, spleen, and kidneys. Two hr after the (14C)EthLin administration, apprx 2.5-5.5% of the total radioactivity in the various organs was still associated with EthLin. Such accumulations, although relatively small, indicate that fatty acid ethyl esters (FAEEs) may be taken up from the plasma. Thus, some of the FAEEs that are formed in certain organs may spillover to the circulating blood where much of it would be hydrolyzed to free fatty acids, but reuptake from the plasma may still account, to some extent, to FAEE-induced damage in chronic alcohol abusers.

CONCEPT CODE:
Behavioral biology - Animal behavior 07003
Biochemistry studies - General 10060
Biochemistry studies - Lipids 10066
Metabolism - General metabolism and metabolic pathways 13002
Metabolism - Lipids 13006
Blood - Blood and lymph studies 15002
Psychiatry - Addiction: alcohol, drugs, smoking 21004
Toxicology - General and methods 22501

INDEX TERMS:
Major Concepts
Behavior; Blood and Lymphatics (Transport and Circulation); Metabolism; Toxicology

INDEX TERMS:
Chemicals & Biochemicals
ETHYL-LINOLEATE; ALCOHOL

INDEX TERMS:
Miscellaneous Descriptors
ALCOHOLISM; CHRONIC ALCOHOL ABUSE; FATTY ACID ETHYL ESTER

ORGANISM:
Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
Muridae
Taxa Notes

Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates

REGISTRY NUMBER: 544-35-4 (ETHYL-LINOLEATE)
64-17-5 (ALCOHOL)

L3 ANSWER 6 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1995:128261 BIOSIS
DOCUMENT NUMBER: PREV199598142561
TITLE: Fatty acid ethyl esters decrease human hepatoblastoma cell proliferation and protein synthesis.
AUTHOR(S): Szczepiorkowski, Zbigniew M.; Dickersin, G. Richard; Laposata, Michael [Reprint author]
CORPORATE SOURCE: Room 235, Gray Build., Mass. General Hosp., Fruit St., Boston, MA 02114, USA
SOURCE: Gastroenterology, (1995) Vol. 108, No. 2, pp. 515-522. CODEN: GASTAB. ISSN: 0016-5085.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 29 Mar 1995
Last Updated on STN: 29 Mar 1995

ABSTRACT:Background/Aims: Fatty acid ethyl esters (FAEEs) are nonoxidative products of **ethanol** metabolism. They have been implicated as mediators of **ethanol**-induced organ damage because FAEE and FAEE synthase have been found specifically in the organs damaged by **ethanol** abuse. This study showed toxicity specifically related to FAEE or their metabolites for intact human hepatoblastoma-derived cells (HepG2). Methods: The lipid core of human low-density lipoprotein (LDL) was extracted and the LDL particle reconstituted with either **ethyl oleate** or ***ethyl*** **arachidonate.** Cultured HepG2 cells were incubated with LDL containing FAEE. Cell proliferation was measured by (methyl-3H)thymidine incorporation. Protein synthesis was determined using L-(35S)methionine. Results: Incubation of cells with 600 mu-mol/L **ethyl oleate** or 800 mu-mol/L **ethyl arachidonate** decreased (methyl-3H)thymidine incorporation into HepG2 cells by 31% and 37%, respectively. LDL reconstituted with 400 mu-mol/L **ethyl** ***oleate*** decreased protein synthesis in intact HepG2 cells by 41%. Electron microscopy revealed significant changes in cell morphology, particularly involving the cell nucleus. FAEE delivered in reconstituted LDL were rapidly hydrolyzed and the fatty acids re-esterified into phospholipids, triglycerides, and cholesterol esters, with preference for triglycerides. Conclusions: These findings provide evidence that FAEE are toxic for intact human hepatoblastoma cells and that they or their metabolites may be an important causative agent in **ethanol**-induced **liver** damage.

CONCEPT CODE: Cytology - Human 02508
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Lipids 10066
Biochemistry studies - Sterols and steroids 10067
Metabolism - Proteins, peptides and amino acids 13012
Digestive system - Pathology 14006
Neoplasms - Pathology, clinical aspects and systemic effects 24004
Neoplasms - Neoplastic cell lines 24005
Development and Embryology - Morphogenesis 25508

INDEX TERMS: Major Concepts
Cell Biology; Development; Gastroenterology (Human Medicine, Medical Sciences); Metabolism; Oncology (Human Medicine, Medical Sciences)

INDEX TERMS: Chemicals & Biochemicals
CHOLESTEROL

INDEX TERMS: Miscellaneous Descriptors
CHOLESTEROL ESTER; LIVER DAMAGE; LOW DENSITY LIPOPROTEIN; PHOSPHOLIPID; TRIGLYCERIDE

ORGANISM: Classifier
Hominidae 86215

Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
Hominidae
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates
REGISTRY NUMBER: 57-88-5D (CHOLESTEROL)

L3 ANSWER 7 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1993:70967 BIOSIS
DOCUMENT NUMBER: PREV199395035467
TITLE: Fatty acid ethyl ester synthase in rat adipose tissue and its relationship to carboxylesterase.
AUTHOR(S): Tsujita, Takahiro [Reprint author]; Okuda, Hiromichi
CORPORATE SOURCE: Dep. Med. Biochem., Sch. Med., Ehime Univ., Shigenobu, Onsen-gun, Ehime 791-02, Japan
SOURCE: Journal of Biological Chemistry, (1992) Vol. 267, No. 33, pp. 23489-23494.
CODEN: JBCHA3. ISSN: 0021-9258.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 26 Jan 1993
Last Updated on STN: 17 Mar 1993
ABSTRACT:Fatty acid ethyl ester (FAEE) synthase was obtained from rat ***adipose*** tissue in an electrophoretically homogeneous form. The enzyme associated with carboxylesterase activity was purified by acetone precipitation followed by successive chromatographies on DEAE-cellulose, phenyl-Sepharose, and Sephadex G-100 gel. The two activities in rat **adipose** tissue were associated as judged by their co-elution profiles, copurifications at differnt steps, co-precipitations by antibody raised against purified FAEE synthase, and identical profiles of inhibition of diisopropyl fluorophosphate. The enzyme catalyzed the hydrolyses of both tri- and monoacylglycerols, and the susceptibilities of substrates increase with decreasing acyl chain length of the fatty acid moiety. **Ethyl oleate**-hydrolyzing activity was about one-eighth of the synthesizing activity. The N-terminal amino acid sequence of the first 27 residues of the purified enzyme was identical to that of the carboxylesterase from rat **liver.** With a polyclonal rabbit antibody against the rat **adipose** tissue FAEE synthase, the enzyme was demonstrated in the **liver**, lung, and testis, but not in the kidney. The antibody removed the FAEE-synthesizing activities in **adipose** tissue (86%), **liver** (23%), lung (62%), and testis (82%). These results suggest that carboxylesterase contributes to the nonoxidative ***ethanol*** metabolism (FAEE synthesis) in various organs.
CONCEPT CODE: Biochemistry studies - General 10060
Biophysics - Molecular properties and macromolecules 10506
Enzymes - General and comparative studies: coenzymes 10802
Enzymes - Chemical and physical 10806
Metabolism - General metabolism and metabolic pathways 13002
Bones, joints, fasciae, connective and adipose tissue - Physiology and biochemistry 18004
INDEX TERMS: Major Concepts
Enzymology (Biochemistry and Molecular Biophysics); Metabolism; Skeletal System (Movement and Support)
INDEX TERMS: Chemicals & Biochemicals
SYNTHASE; CARBOXYLESTERASE; ETHANOL
INDEX TERMS: Miscellaneous Descriptors
CHARACTERIZATION; NONOXIDATIVE ETHANOL METABOLISM; PURIFICATION
ORGANISM: Classifier
Muridae 86375
Super Taxa

Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Organism Name
Muridae
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates
REGISTRY NUMBER: 9031-57-6 (SYNTHASE)
9016-18-6 (CARBOXYLESTERASE)
64-17-5 (ETHANOL)

L3 ANSWER 8 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1992:149175 BIOSIS
DOCUMENT NUMBER: PREV199293083400; BA93:83400
TITLE: ETHANOL-INDUCED FATTY ACID ETHYL ESTER FORMATION IN-VIVO AND IN-VITRO IN RAT LUNG.
AUTHOR(S): MANAUTOU J E [Reprint author]; CARLSON G P
CORPORATE SOURCE: DEP PHARMACOL TOXICOL, SCH PHARM PHARMACAL SCI, PURDUE UNIV, WEST LAFAYETTE, INDIANA 47907-1334, USA
SOURCE: Toxicology, (1991) Vol. 70, No. 3, pp. 303-312.
CODEN: TXCYAC. ISSN: 0300-483X.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 12 Mar 1992
Last Updated on STN: 13 Mar 1992
ABSTRACT:Fatty acid esters (FAEE) are the end products of a non-oxidative pathway for **ethanol** metabolism in a variety of human, rabbit, rat and murine tissues. Our objective was to determine the significance of this pathway in the metabolism of **ethanol** by the rat lung. In vitro, 14C-labeled **ethyl oleate** formation was assayed in the lung and compared with the pancreas, **liver**, heart and brain. Lipids were extracted with acetone, and 14C-labeled **ethyl oleate** was isolated and quantified by thin layer chromatography (TLC) and scintillation spectrometry. FAEE synthetic activity in the lungs (in vitro) was found to be intermediate among the organs examined. In vivo, male rats received 10% ***ethanol*** in their drinking water with or without daily i.p. injections of 4-methylpyrazole (1 mmol/kg body wt) for 15 days. Another group of male rats received 4 g/kg body wt **ethanol** as a 50% (v/v) solution by gavage every 12 h for 2 days. FAEE from the three organs with the highest in vitro activity for FAEE synthesis (pancreas, **liver** and lung) were extracted with acetone, isolated from normal lipids by TLC and separated by gas chromatography. The lung had lower FAEE-forming activity than the pancreas or the **liver** in the 15-day studies. However, in the 2-day study, the lung had higher activity than the **liver** but lower activity than the pancreas. **Ethyl oleate**, **ethyl stearate** and **ethyl palmitate** were the predominant FAEE formed in the intact organism. **Ethanol**-induced FAEE may play a role in the development of alcohol-related injuries to the lung.
CONCEPT CODE: Biochemistry studies - General 10060
Biochemistry studies - Lipids 10066
Metabolism - General metabolism and metabolic pathways 13002
Metabolism - Lipids 13006
Digestive system - Pathology 14006
Respiratory system - Pathology 16006
Psychiatry - Addiction: alcohol, drugs, smoking 21004
Toxicology - General and methods 22501
INDEX TERMS: Major Concepts
Behavior; Digestive System (Ingestion and Assimilation); Metabolism; Respiratory System (Respiration); Toxicology
INDEX TERMS: Miscellaneous Descriptors
PANCREAS LIVER TOXICOKINETICS ALCOHOL ABUSE ETHYL OLEATE ETHYL STEARATE ETHYL PALMITATE
ORGANISM: Classifier
Muridae 86375

Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates

REGISTRY NUMBER: 64-17-5 (ETHANOL)
64-17-5 (ALCOHOL)
111-62-6 (ETHYL OLEATE)
111-61-5 (ETHYL STEARATE)
628-97-7 (ETHYL PALMITATE)

L3 ANSWER 9 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1991:279028 BIOSIS
DOCUMENT NUMBER: PREV199192011643; BA92:11643
TITLE: THE METABOLISM OF ETHYL ESTERS OF FATTY ACIDS IN ADIPOSE TISSUE OF RATS CHRONICALLY EXPOSED TO ETHANOL.
AUTHOR(S): DEPERGOLA G [Reprint author]; KJELLSTROM C; HOLM C; CONRADI N; PETERSSON P; BJORNTORP P
CORPORATE SOURCE: DEP MED I, SAHLGYREN'S HOSP, UNIV GOTEBORG, 413 45 GOTEBORG, SWEDEN
SOURCE: Alcoholism Clinical and Experimental Research, (1991) Vol. 15, No. 2, pp. 184-195.
CODEN: ACRSDM. ISSN: 0145-6008.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 13 Jun 1991
Last Updated on STN: 14 Jun 1991

ABSTRACT:The concentration of ethyl esters of fatty acids as well as the activity of the enzyme synthesizing these esters (fatty acid ethyl ester synthase) were determined in **adipose** tissue of rats ingesting ***ethanol*** (9-16 g/kg body weight/day) for different periods of time. After 10 and 17 weeks of **ethanol** exposure about 300 nmol of ethyl esters of oleic, palmitic, stearic, and linoleic acids were found per gram ***adipose*** tissue. The ethyl esters disappeared after 1 week of abstinence. Closer analyses, using radioactive **ethanol**, revealed a half-life of the esters of less than 24 hr. The bulk of the esters was found in a membrane preparation of isolated adipocytes. Hormone-sensitive lipase hydrolyzed emulsified **ethyl oleate** as efficiently as that of trioleoylglycerol, but in mixed **ethyl oleate**/trioleoyl glycerol particles the hydrolysis of **ethyl oleate** was slower, suggesting a decreased accessibility. Synthase activity was found in ***adipose*** tissue from rats not exposed to **ethanol.** It doubled after 10 and 17 weeks of **ethanol** and decreased with a half-life of at least a week after abstinence. It was concluded that ethyl esters of fatty acids are formed in rat **adipose** tissue as previously shown in other tissues. They seem to be stored mainly in membranous parts of the adipocytes. Synthase activity is induced by **ethanol.** The elevated activity has a longer half-life, and may be useful as an indicator of alcohol abuse.

CONCEPT CODE: Behavioral biology - Animal behavior 07003
Biochemistry studies - General 10060
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Lipids 10066
Enzymes - Physiological studies 10808
Metabolism - General metabolism and metabolic pathways 13002
Metabolism - Lipids 13006
Metabolism - Proteins, peptides and amino acids 13012
Bones, joints, fasciae, connective and adipose tissue - Pathology 18006
Toxicology - General and methods 22501

INDEX TERMS: Major Concepts
Behavior; Enzymology (Biochemistry and Molecular Biophysics); Metabolism; Skeletal System (Movement and

Support); Toxicology

INDEX TERMS: Miscellaneous Descriptors
OLEIC ACID PALMITIC ACID STEARIC ACID LINOLEIC ACID MEMBRANOUS PARTS SYNTHASE ACTIVITY

ORGANISM: Classifier
Muridae 86375
Super Taxa
Rodentia; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Rodents, Vertebrates

REGISTRY NUMBER: 64-17-5 (ETHANOL)
112-80-1 (OLEIC ACID)
57-10-3 (PALMITIC ACID)
57-11-4 (STEARIC ACID)
60-33-3 (LINOLEIC ACID)
9031-57-6 (SYNTHASE)

L3 ANSWER 10 OF 10 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1991:270985 BIOSIS
DOCUMENT NUMBER: PREV199192003600; BA92:3600
TITLE: INDEPENDENT SEGREGATION OF GLUTATHIONE S-TRANSFERASE AND FATTY ACID ETHYL ESTER SYNTHASE FROM PANCREAS AND OTHER HUMAN TISSUES.
AUTHOR(S): SHARMA R [Reprint author]; GUPTA S; SINGHAL S S; AHMAD H; HAQUE A; AWASTHI Y C
CORPORATE SOURCE: DEP HUMAN BIOLOGICAL CHEMISTRY GENETICS, UNIVERSITY TEXAS MEDICAL BRANCH, GALVESTON, TEX 77550, USA
SOURCE: Biochemical Journal, (1991) Vol. 275, No. 2, pp. 507-514. ISSN: 0264-6021.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 13 Jun 1991
Last Updated on STN: 14 Jun 1991

ABSTRACT:Glutathione S-transferase (GST) isoenzyme of human pancreas were purified, characterized and evaluated for their possible role in the metabolism of **ethanol.** Human pancreas has at least two GST isoenzymes belonging to the Alpha class (pI 8.8 and 8.1), one belonging to the Mu class (pI 6.4) and one belonging to the Pi class (pI 4.9). During the purification of GSTs from pancrease as well as from heart, **liver**, lung, brain and muscle, the fatty acid ethyl ester synthase (FAEES) activity was monitored in order to evaluate the role of GSTs in metabolism of **ethanol**, as suggested in earlier studies. Both t.l.c. and h.p.l.c. were used to identify **ethyl** ***oleate*** in reaction mixtures to monitor FAEES activity. During the purification of GSTs with the use of affinity chromatography on GSH linked to epoxy-activated Sepharose 6B, FAEES and GST activities from each of these tissues segregated independently. Purified GST isoenzymes from these tissues did not exhibit any FAEES activity. Antibodies raised against Pi-class GST, as expected, immunoprecipitated most of the GST activity of brain and heart without precipitating FAEES activity. These results suggest that human GST isoenzymes belonging to the Alpha, Mu and Pi classes do not express FAEES activity. The independent segregation of GST and FAEES activities was further demonstrated by monitoring GST activity during the purification of FAEES from pancreas. It was found that purified FAEES had no GST activity toward 1-chloro-2,4-dinitrobenzne and a number of other electrophilic substrates. Results of these studies demonstrate that FAEES and GSTs are distinct proteins.

CONCEPT CODE: Biochemistry studies - General 10060
Biochemistry studies - Proteins, peptides and amino acids 10064
Biochemistry studies - Lipids 10066
Enzymes - Physiological studies 10808
Metabolism - General metabolism and metabolic pathways 13002
Metabolism - Lipids 13006

Digestive system - Physiology and biochemistry 14004
Cardiovascular system - Physiology and biochemistry 14504
Respiratory system - Physiology and biochemistry 16004
Muscle - Physiology and biochemistry 17504
Nervous system - Physiology and biochemistry 20504
Toxicology - General and methods 22501

INDEX TERMS: Major Concepts
Cardiovascular System (Transport and Circulation); Digestive System (Ingestion and Assimilation); Enzymology (Biochemistry and Molecular Biophysics); Metabolism; Muscular System (Movement and Support); Nervous System (Neural Coordination); Respiratory System (Respiration); Toxicology

INDEX TERMS: Miscellaneous Descriptors
EC 2.5.1.18 ETHANOL METABOLISM HEART LIVER LUNG BRAIN MUSCLE

ORGANISM: Classifier
Hominidae 86215
Super Taxa
Primates; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Humans, Mammals, Primates, Vertebrates

REGISTRY NUMBER: 50812-37-8 (GLUTATHIONE S-TRANSFERASE)
90119-16-7 (FATTY ACID ETHYL ESTER SYNTHASE)
50812-37-8 (EC 2.5.1.18)
64-17-5 (ETHANOL)

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| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
|---|---|---|
| FULL ESTIMATED COST | 53.90 | 54.11 |

STN INTERNATIONAL LOGOFF AT 14:55:37 ON 21 MAR 2004

| L Number | Hits | Search Text | DB | Time stamp |
|---|---|---|---|---|
| 1 | 9 | (("5952235") or ("5399731") or ("5399730") or ("5126271") or ("4797233") or ("4721584") or ("4608202") or ("4334540") or ("5515847")).PN. | USPAT | 2004/03/21 16:20 |
| 2 | 4 | 5126271.URPN. | USPAT | 2004/03/21 16:23 |
| - | 1 | ("4568560").PN. | USPAT | 2004/03/21 14:40 |
| - | 1378 | ((ethyl adj1 oleate) or (ethyl adj1 palmitate) or (ethyl adj1 stearate) or (ethyl adj1 arachidonate) or (ethyl adj1 linoleate)) same (ethanol or (ethyl adj1 alcohol)) | USPAT | 2004/03/21 14:42 |
| - | 11 | (((ethyl adj1 oleate) or (ethyl adj1 palmitate) or (ethyl adj1 stearate) or (ethyl adj1 arachidonate) or (ethyl adj1 linoleate)) same (ethanol or (ethyl adj1 alcohol))) same liver | USPAT | 2004/03/21 14:43 |
| - | 0 | (((ethyl adj1 oleate) or (ethyl adj1 palmitate) or (ethyl adj1 stearate) or (ethyl adj1 arachidonate) or (ethyl adj1 linoleate)) same (ethanol or (ethyl adj1 alcohol))) same adipose | USPAT | 2004/03/21 14:43 |
| - | 3 | (((ethyl adj1 oleate) or (ethyl adj1 palmitate) or (ethyl adj1 stearate) or (ethyl adj1 arachidonate) or (ethyl adj1 linoleate)) same (ethanol or (ethyl adj1 alcohol))) same (intake or consumption or binging or alcholic or drunk) | USPAT | 2004/03/21 16:19 |
| - | 24 | (((ethyl adj1 oleate) or (ethyl adj1 palmitate) or (ethyl adj1 stearate) or (ethyl adj1 arachidonate) or (ethyl adj1 linoleate)) same (ethanol or (ethyl adj1 alcohol))) same (alcoholic or alcoholism) | USPAT | 2004/03/21 14:44 |